

Healthpath Pro's Gut Health Tests

BIOMARKERS

Healthpath Pro's GI Pro **Essential**, **Advanced** and **Ultimate Gut Health Tests** show you what's going on in your gut. By looking at imbalances in bacteria, yeasts, parasites and other intestinal health biomarkers, you find out what's contributing to your symptoms.

The biomarkers provide clinical information on three key areas:



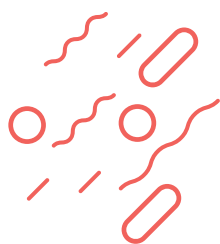
1 | Digestion/Absorption

- pH
- Pancreatic elastase
- Zonulin
- Digestive Residues



2 | Immune activity/Inflammation

- Calprotectin
- Haemoglobin
- Secretory IgA
- H. Pylori
- Archaea/methanogens
- E. Coli, Lactobacillus species, Enterococcus species
- Akkermansia muciniphila, Faecalibacterium prausnitzii



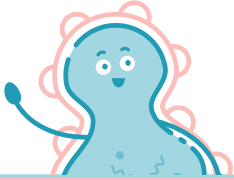
3 | Gut microbiome/Mycobiome

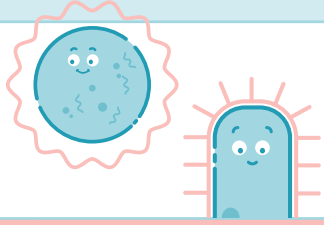
- Microbiome diversity
- Enterotype
- Dysbiosis index
- Actinobacteria
- Bacteroidetes
- Firmicutes
- Proteobacteria
- Fusobacteria
- Verrucomicrobia
- Hydrogen-sulphide production
- Oxalate-degrading bacteria
- Yeasts
- Parasites
- Helminths

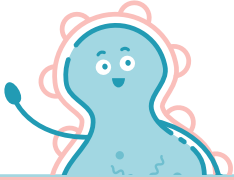


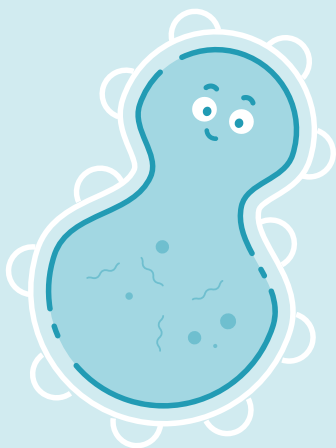
Clinical advantages of the qPCR technology used in Healthpath Pro tests

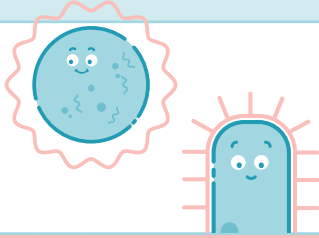
This new method of analysis allows for a single sample. This makes the process easier for everyone, and it's particularly helpful for children and those struggling with diarrhoea or constipation.

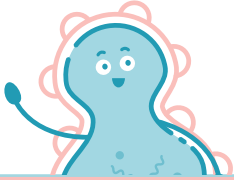
	GI Pro Essential	GI Pro Advanced
Stool properties		
Colour	✓	✓
Consistency	✓	✓
pH	✓	✓
Biodiversity		
Diversity	✓	✓
Dysbiosis index	✓	✓
Bacterial distribution		
Actinobacteria	✓	✓
Bacteroidetes	✓	✓
Firmicutes	✓	✓
Fusobacteria	✓	✓
Proteobacteria	✓	✓
Verrucomicrobia	✓	✓
Other	✓	✓
Firmicutes/ Bacteroidetes Ratio	✓	✓
Enterotype		
1, 2 or 3	✓	✓

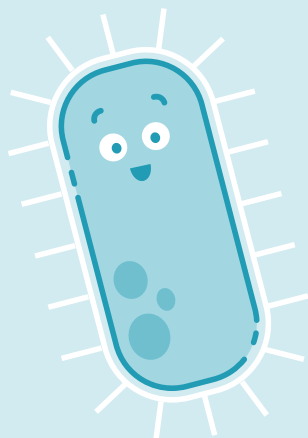
	GI Pro Essential	GI Pro Advanced
Actinobacteria		
Bifidobacteria	✓	✓
Equol-producing bacteria	✓	✓
Adlercreutzia species	✓	✓
Eggerthella lenta	✓	✓
Slackia species	✓	✓
Bacteroidetes		
Bacteroides	✓	✓
Bacteroides uniformis	✓	✓
Bacteroides ovatus	✓	✓
Prevotella	✓	✓
Prevotella copri	✓	✓
Firmicutes		
Butyrate-producing bacteria	✓	✓
Faecalibacterium prausnitzii	✓	✓
Eubacterium rectale	✓	✓
Eubacterium hallii	✓	✓
Roseburia species	✓	✓
Ruminococcus species	✓	✓
Coprococcus	✓	✓
Butyrivibrio species	✓	✓
Cl. butyricum		✓
Total bacterial count	✓	✓

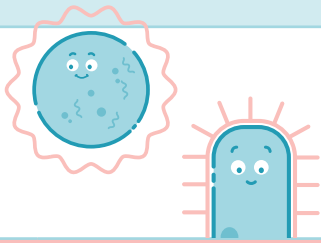
		GI Pro Essential	GI Pro Advanced
			
Firmicutes			
Clostridia		✓	✓
	Clostridia total bacterial count	✓	✓
	Clostridia cluster 1	✓	✓
	Clostridia histolytium		✓
	Clostridium perfringens		✓
	Clostridium sporenges		✓
Other Firmicutes			✓
	Christensenellaceae		✓
	Dialister invisus		✓
Fusobacteria			
Fusobacterium species		✓	✓
Verrucomicrobia			
Akkermansia muciniphila		✓	✓

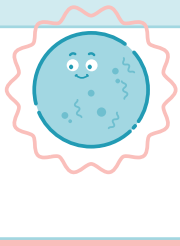


		GI Pro Essential	GI Pro Advanced
			
Proteobacteria			
Potentially pathogenic bacteria		✓	✓
	Haemophilus	✓	✓
	Acinetobacter	✓	✓
	Proteus species	✓	✓
	<i>Proteus mirabilis</i>		✓
	Klebsiella species	✓	✓
	Enterobacter species	✓	✓
	Serratia species	✓	✓
	Hafnia species	✓	✓
	Morganella species	✓	✓
	Providencia species	✓	✓
	Citrobacter species	✓	✓
	Pseudomonas species	✓	✓
Histamine-producing bacteria		✓	✓
H2S production		✓	✓
	Sulphate-reducing bacteria	✓	✓
	<i>Desulfovibrio piger</i>	✓	✓
	<i>Desulfomonas pigra</i>	✓	✓
	<i>Bilophila wadsworthii</i>	✓	✓

	GI Pro Essential	GI Pro Advanced
		
Proteobacteria		
Oxalate-degrading bacteria		✓
Oxalobacter formigenes		✓
Archaea		
Methanobrevibacter	✓	✓
Immunogenically effective bacteria		
Escherichia coli	✓	✓
Enterococcus species	✓	✓
Lactobacillus species	✓	✓
Mucin production/ mucosal barrier		
Akkermansia muciniphila	✓	✓
Faecalibacterium prausnitzii	✓	✓
Helicobacter pylori (H. pylori)		
Helicobacter AG	✓	✓



	GI Pro Essential	GI Pro Advanced
		
Yeasts		
Candida albicans	✓	✓
Candida krusei	✓	✓
Candida glabrata	✓	✓
Candida dubliniensis	✓	✓
Candida parapsilosis	✓	✓
Candida tropicalis	✓	✓
Candida lusitanae	✓	✓
Parasites		
Pathobionts	✓	✓
Blastocystis hominis	✓	✓
Dientamoeba fragilis	✓	✓
Helicobacter AG	✓	✓
Pathogenic intestinal protozoa	✓	✓
Giardia lamblia	✓	✓
Entamoeba histolytica	✓	✓
Cryptosporidium species	✓	✓
Cyclospora cayentanensis	✓	✓



GI Pro
Essential

GI Pro
Advanced

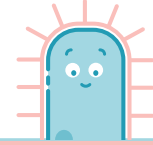
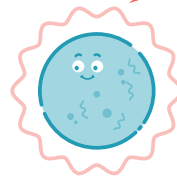
Functional markers

Calprotectin	✓	✓
Haemoglobin in faeces immunologically	✓	✓
Secretory IgA	✓	✓
Pancreatic elastase	✓	✓
Zonulin		✓

Digestive residues

Determination of fat	✓	✓
Determination of nitrogen	✓	✓
Determination of sugar	✓	✓
Determination of water	✓	✓

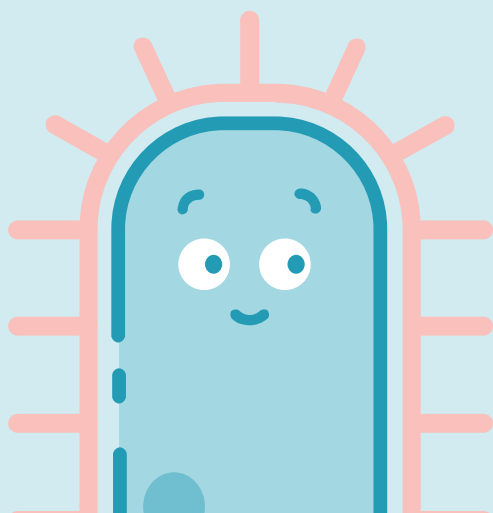
In our GI Pro Ultimate Test, you will receive everything in the GI Pro Advanced, plus Helminths (worms).



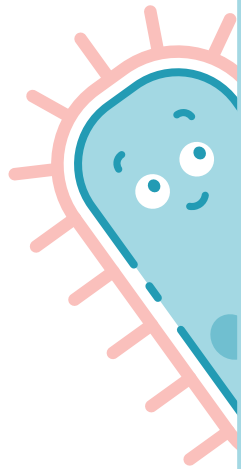
GI Pro
Ultimate

Helminths

Taenia species	✓
Taenia solium	✓
Taenia saginata	✓
Ascaris species	✓
Enterobius vermicularis	✓
Ancylostoma species	✓
Ancylostoma duodenale	✓
Hymenolepsis species	✓
Hymenolepsis nana	✓
Hymenolepsis diminuta	✓
Trichuris trichiura	✓
Necator americanus	✓
Strongyloides species	✓
Strongyloides stercoralis	✓
Microsporidia	✓
Enterocytozoon species	✓
Encephalitozoon species	✓



In your report, you will receive an overview of your gut health:



The screenshot displays the healthpath Pro interface. At the top, the logo 'healthpath Pro' is on the left, and 'MAKE RECOMMENDATIONS 0' and 'INVITE CLIENTS 0' are on the right. A navigation menu on the left includes: DASHBOARD, CLIENTS, INVITATIONS, TESTS, SUPPLEMENTS, CONSULTATIONS, FOOD, RESOURCES, MESSAGING, COMMISSION, and HOW TO.

The main content area is titled 'YOU' and features a stool type comparison chart with five categories:

TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 5
Sausage shaped but lumpy	Like a sausage but with cracks on its surface	Soft blobs with clear-cut edges	Fluffy pieces with rugged edges	Watery, no solid pieces. Entirely liquid

Below this chart are two summary cards:

- pH**: Shows a score of 6. A scale from 3.0 (ACIDIC) to 11.0 (ALKALINE) is shown, with an 'OPTIMAL' range between 5.0 and 6.0. The score '6' is positioned at the end of the optimal range.
- Biodiversity**: Shows a score of 5. Text reads: 'Congrats! You're well inhabited.' Below this, it explains: 'Species richness is thought to be a major marker for gut health. Ideally, we all want high bacterial richness and diversity, as these often reflect ecosystem stability and resilience. There's also an association between a reduction in the number of species in a person's poop sample and an increased risk of disease.'

A detailed breakdown of in-range and out-of-range markers:

healthpath Pro

MAKE RECOMMENDATIONS 0

INVITE CLIENTS 0

Tests > Ultimate Gut Health Test

Notes Overview In range **Out of range** Next steps

Results - out of range

Show detailed description Yes ⓘ

DOWNLOAD LAB REPORT

< PREV

NEXT >

Bacterial distribution

Out of range

Actinobacteria

Borderline low

Actinobacteria help to maintain balance in the gut. They produce special substances called short-chain fatty acids, which reduce the pH within the intestines. A lower pH is a good thing because it helps to prevent the growth of bad bacteria.

Low levels of Actinobacteria may predispose a person to intestinal inflammation. Low levels of Bifidobacteria (a type of Actinobacteria) are seen in IBS, IBD and colon cancer. Taking antibiotics can reduce Bifidobacteria.

Verrucomicrobia

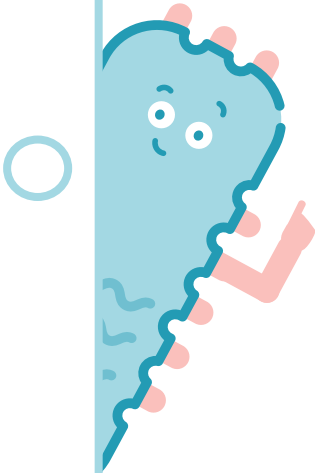
Borderline low

There's only one type of Verrucomicrobia found in human stools: Akkermansia muciniphila. This species correlates with a healthier, more diverse gut microbiome.

Supplement advice from your practitioner:

The screenshot displays the healthpath Pro interface. At the top, the logo and navigation links are visible: 'healthpath Pro', 'MAKE RECOMMENDATIONS 0', and 'INVITE CLIENTS 0'. The sidebar on the left lists various menu items: DASHBOARD, CLIENTS, INVITATIONS, TESTS, SUPPLEMENTS, CONSULTATIONS, FOOD, RESOURCES, MESSAGING, COMMISSION, and HOW TO. The main content area is titled 'Recommendations - 17/03/2021' and includes a link to 'Back to supplement recommendations'. Below this, there are two main sections: 'Your personal note from your practitioner' and 'Your supplements schedule'. The 'Your supplements schedule' section includes a 'SEND TO MY EMAIL' button and a table with the following data:

SUPPLEMENT	DOSAGE	DURATION	WHEN TO TAKE
Gaia Herbs - Oil of Oregano 230mg - 60 Liquid Phyto-capsules	1 capsule twice per day.	8-12 weeks.	With each meal



External ID

Name	Demo	Date of Birth	23.01.1964	Order ID	12630935
First Name		Sex	Female	Order Date	10.12.2021
Sampling Date	10.12.2021 00:00	Validation Date	10.12.2021	Findings Status	Final Report
Sample Material	FE	Validation on	10.12.2021	Findings Date	10.12.2021

Test	Result	Unit	Standard Range	Previous Result
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GI Pro Ultimate

Molecular genetic microbiome analysis 3.0

Stool Properties

Colour	brown			FE NA) VISU
Consistency	mushy			FE NA) VISU
pH	6,5		5,8 - 6,5	FE NA) TESTS

Biodiversity

Diversity	6,42		> 5	FE NA) MGSEQ
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The bacterial diversity in the intestinal tract may vary considerably from person to person. Antibiotic therapies, infections, increasing age, unbalanced diets or smoking are causes of declining diversity.

Grad



Enterotype

Bacteroides	FE NA) MGSEQ
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Human intestinal microbiomes can be differentiated into three Enterotypes. Enterotypes are defined by dominant bacterial clusters with distinct metabolic properties.

Enterotyp



Dysbiosis index

The dysbiosis index represents a measure of deviations within the microbiome. Depending on their relevance, all detected phyla, genera and species are considered.



Index



Ratio

Firmicutes/Bacteroidetes	1,73	Quotient	< 1,5	FE NA) RECHN
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Phyla

Actinobacteria	1,7	%	1,0 - 5,0	FE NA) MGSEQ
Bacteroidetes	28,6	%	30 - 60	FE NA) MGSEQ
Firmicutes	49,4	%	30 - 60	FE NA) MGSEQ
Fusobacteria	0,0	%	0,0 - 1,0	FE NA) MGSEQ
Proteobacteria	8,9	%	1,5 - 5,0	FE NA) MGSEQ
Verrucomicrobia	1,9	%	1,5 - 5,0	FE NA) MGSEQ
Other	9,5	%		FE NA) MGSEQ

Test	Result	Unit	Standard Range	Previous Result
Bacteria Phyla - most important genera and species				
Actinobacteria				
Bifidobacterium	1,2 x 10 ¹⁰ CFU/g faeces		> 5,0 x 10 ⁹	FE NA) MGSEQ
Bifidobacterium adolescentis	81 %			FE NA) MGSEQ
Bifidobacterium longum	16 %			FE NA) MGSEQ
Equol producing bacteria	4,3 x 10 ⁹ CFU/g faeces		> 5,0 x 10 ⁹	FE NA) MGSEQ
Adlercreutzia spp.				FE NA) MGSEQ
Eggerthella lenta				FE NA) MGSEQ
Slackia spp.				FE NA) MGSEQ
Bacteroidetes				
Bacteroides	1,5 x 10 ¹¹ CFU/g faeces		> 1,5 x 10 ¹¹	FE NA) MGSEQ
Bacteroides uniformis	15 %			FE NA) MGSEQ
Bacteroides ovatus	12 %			FE NA) MGSEQ
Prevotella	4,0 x 10 ¹⁰ CFU/g faeces		> 1,0 x 10 ¹⁰	FE NA) MGSEQ
Firmicutes				
Butyrate producing bacteria				
Total bacteria count	3,0 x 10 ¹¹ CFU/g faeces		> 1,2 x 10 ¹¹	FE NA) MGSEQ
Faecalibacterium prausnitzii	8,4 x 10 ¹⁰ CFU/g faeces		> 5,0 x 10 ¹⁰	FE NA) MGSEQ
Eubacterium rectale	3,7 x 10 ¹⁰ CFU/g faeces		> 1,0 x 10 ¹⁰	FE NA) MGSEQ
Eubacterium hallii	3,3 x 10 ¹⁰ CFU/g faeces		> 5,0 x 10 ⁹	FE NA) MGSEQ
Roseburia spp.	5,0 x 10 ¹⁰ CFU/g faeces		> 2,0 x 10 ¹⁰	FE NA) MGSEQ
Ruminococcus spp.	4,1 x 10 ¹⁰ CFU/g faeces		> 3,0 x 10 ¹⁰	FE NA) MGSEQ
Coprococcus spp.	3,0 x 10 ¹⁰ CFU/g faeces		> 2,0 x 10 ¹⁰	FE NA) MGSEQ
Butyrivibrio spp.	2,1 x 10 ¹⁰ CFU/g faeces		> 5,0 x 10 ⁹	FE NA) MGSEQ
Clostridia				
Clostridia total bacteria count	2,7 x 10 ⁹ CFU/g faeces		< 4,0 x 10 ⁹	FE NA) MGSEQ
Clostridia Cluster I	1,0 x 10 ⁵ CFU/g faeces		< 2,0 x 10 ⁹	FE NA) MGSEQ
Clostridium histolyticum	< 1,0 x 10 ⁵ CFU/g faeces		< 2,0 x 10 ⁹	FE NA) MGSEQ
Clostridium perfringens	< 1,0 x 10 ⁵ CFU/g faeces		< 1,0 x 10 ⁸	FE NA) MGSEQ
Clostridium sporogenes	< 1,0 x 10 ⁵ CFU/g faeces		< 1,0 x 10 ⁸	FE NA) MGSEQ
Other Firmicutes				
Christensenellaceae	5,6 x 10 ⁹ CFU/g faeces		> 1,0 x 10 ⁹	FE NA) MGSEQ
Dialister spp.	< 1,0 x 10 ⁵ CFU/g faeces		< 4,0 x 10 ¹⁰	FE NA) MGSEQ
Cl. butyricum	6,5 x 10 ⁸ CFU/g faeces		> 1,0 x 10 ⁸	FE NA) MGSEQ
Fusobacteria				
Fusobacterium	< 1,0 x 10 ⁵ CFU/g faeces		< 1,0 x 10 ⁷	FE NA) MGSEQ
Verrucomicrobia				
Akkermansia muciniphila	1,9 x 10 ⁹ CFU/g faeces		> 5,0 x 10 ⁹	FE NA) MGSEQ
Proteobacteria				
Pathogenic or potentially pathogenic bacteria				
Haemophilus spp.	2,2 x 10 ⁹ CFU/g faeces		< 1,0 x 10 ⁹	FE NA) MGSEQ
Acinetobacter spp.	< 1,0 x 10 ⁵ CFU/g faeces		< 1,0 x 10 ⁶	FE NA) MGSEQ
Proteus spp.	< 1,0 x 10 ⁵ CFU/g faeces		< 1,0 x 10 ⁶	FE NA) MGSEQ
Klebsiella spp.	< 1,0 x 10 ⁵ CFU/g faeces		< 1,0 x 10 ⁶	FE NA) MGSEQ
Enterobacter spp.	< 1,0 x 10 ⁵ CFU/g faeces		< 1,0 x 10 ⁶	FE NA) MGSEQ

FE=stool

* cooperate analytics (R), A) accredited, NA) not accredited

Test	Result	Unit	Standard Range	Visual Scale	Previous Result
Serratia spp.	< 1,0 x 10 ⁵ CFU/g faeces		< 1,0 x 10 ⁶		FE NA) MGSEQ
Hafnia spp.	< 1,0 x 10 ⁵ CFU/g faeces		< 1,0 x 10 ⁶		FE NA) MGSEQ
Morganella spp.	< 1,0 x 10 ⁵ CFU/g faeces		< 1,0 x 10 ⁶		FE NA) MGSEQ
Citrobacter spp.	< 1,0 x 10 ⁵ CFU/g faeces		< 5,0 x 10 ⁸		FE NA) MGSEQ
Pseudomonas spp.	< 1,0 x 10 ⁵ CFU/g faeces		< 5,0 x 10 ⁷		FE NA) MGSEQ
Providencia spp.	< 1,0 x 10 ⁵ CFU/g faeces		< 5,0 x 10 ⁷		FE NA) MGSEQ
H2S production					
Sulphate reducing bacteria	5,0 x 10⁹ CFU/g faeces		< 2,0 x 10 ⁹		FE NA) MGSEQ
Desulfovibrio piger	< 1,0 x 10 ⁵ CFU/g faeces		< 1,0 x 10 ⁹		FE NA) MGSEQ
Desulfomonas pigra	< 1,0 x 10 ⁵ CFU/g faeces		< 1,0 x 10 ⁹		FE NA) MGSEQ
Bilophila wadsworthii	< 1,0 x 10 ⁵ CFU/g faeces		< 2,0 x 10 ⁹		FE NA) MGSEQ
Histamine producing bacteria					
Histamine producing bacteria	< 1,0 x 10 ⁵ CFU/g faeces		< 5,0 x 10 ⁸		FE NA) MGSEQ
Oxalate degrading bacteria					
Oxalobacter formigenes	1,3 x 10 ⁹ CFU/g faeces		> 1,0 x 10 ⁸		FE NA) MGSEQ
Immunogenicity / Mucus production					
Immunogenically effective bacteria					
Escherichia coli	5,2 x 10⁵ CFU/g faeces		10 ⁶ - 10 ⁷		FE NA) MGSEQ
Enterococcus spp.	< 1,0 x 10⁵ CFU/g faeces		10 ⁶ - 10 ⁷		FE NA) MGSEQ
Lactobacillus spp.	2,6 x 10 ⁵ CFU/g faeces		10 ⁵ - 10 ⁷		FE NA) MGSEQ
Mucin production / Mucosal barrier					
Akkermansia muciniphila	1,9 x 10⁹ CFU/g faeces		> 5,0 x 10 ⁹		FE NA) MGSEQ
Faecalibacterium prausnitzii	8,4 x 10 ¹⁰ CFU/g faeces		> 5,0 x 10 ¹⁰		FE NA) MGSEQ
Archaea					
Methanogens					
Methanobrevibacter spp.	2,6 x 10 ⁷ CFU/g faeces		< 1,0 x 10 ⁸		FE NA) MGSEQ
Mycobiome: relevant yeasts					
Candida albicans (CA)	4,1 x 10³ KBE /g Stuhl		<1,0 x 10 ³		FE NA) QPCR
Candida krusei (CK)	<1,0 x 10 ³ KBE /g Stuhl		< 1,0 x 10 ³		FE NA) QPCR
Candida glabrata (CG)	<1,0 x 10 ³ KBE /g Stuhl		< 1,0 x 10 ³		FE NA) QPCR
Candida dubliniensis (CD)	<1,0 x 10 ³ KBE /g Stuhl		< 1,0 x 10 ³		FE NA) QPCR
Candida parapsilosis (CP)	<1,0 x 10 ³ KBE /g Stuhl		< 1,0 x 10 ³		FE NA) QPCR
Candida tropicalis (CTp)	<1,0 x 10 ³ KBE /g Stuhl		< 1,0 x 10 ³		FE NA) QPCR
Candida lusitanae (CL)	<1,0 x 10 ³ KBE /g Stuhl		< 1,0 x 10 ³		FE NA) QPCR
Parasites					
Pathobionts					
Blastocystis hominis	positive		negative		FE A) MOLEK
Dientamoeba fragilis	positive		negative		FE A) MOLEK
Pathogenic intestinal protozoa					
Giardia lamblia	positive		negative		FE A) MOLEK
Entamoeba histolytica	negative		negative		FE A) MOLEK
Cryptosporidium species	negative		negative		FE A) MOLEK
Cyclospora cayetanensis	negative		negative		FE A) MOLEK
Helminthiasis					
Helminthen					

FE=stool

* cooperate analytics (R), A) accredited, NA) not accredited

Test	Result	Unit	Standard Range	Previous Result
Small intestinal roundworms	negative		negative	FE NA) MOLEK
Pinworms	negative		negative	FE NA) MOLEK
Hookworms	negative		negative	FE NA) MOLEK
Threadworms	negative		negative	FE NA) MOLEK
Whipworms	negative		negative	FE NA) MOLEK
Dwarf tapeworms	negative		negative	FE NA) MOLEK
Tapeworms	negative		negative	FE NA) MOLEK
New world hookworms	negative		negative	FE NA) MOLEK

Microsporidia

Microsporidia	negative		negative	FE NA) MOLEK
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Special Request

Haemoglobin in stool immunological	<10	µg/g	< 10	FE A) ELISA
Calprotectin	<17,90	mg/l	< 50	FE A) ELISA
Secretory IgA	167,0	µg/ml	510 - 2040	FE A) ELISA
Pancreatic elastase	423,39	µg/g	> 200	FE A) ELISA
Zonulin	13,82	ng/ml	< 55	FE A) ELISA

Gastro diagnostics

Helicobacter AG	negative		negative	FE A) CLIA
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Digestive Residues

Quantitative determination of fat	5,80	g/100g	< 3,5	FE NA) PHOT
Quantitative determination of nitrogen	0,50	g/100g	< 1,0	FE NA) PHOT
Quantitative determination of sugar	2,10	g/100g	< 2,5	FE NA) PHOT
Quantitative determination of water	80,70	g/100g	75 - 85	FE NA) PHOT